

**Docket No: AF01120****Serial No. 10/023,548**

timely filed. Applicants respectfully request further consideration of the application based on the present Reply.

### **REMARKS**

Claims 1-21 are pending in the application. Although the Examiner has withdrawn consideration of the non-elected species, Applicants submit that since the generic claim 1 is considered allowable, that claims 2-4, 14-16 and 18-21 should be brought back into consideration in the present application.

Applicants respectfully request reconsideration of the application based on the following remarks. Applicants respectfully submit that all of the claims 1-21 are in condition for allowance.

### **Election/Restriction**

The Examiner asserts that "newly submitted claims 14-21 directed to an invention that is independent or distinct from the invention originally claimed". Applicants note that the Examiner did not impose a restriction requirement, but instead imposed an election of species requirement. Thus, there is no "invention that is independent or distinct", rather there are only species of the generic claim 1. Since Applicants consider that claim 1 is allowable, the claims 14-21 should be brought back into the case and allowed together with claim 1. Since claims 14-21 are still in the application and were amended the same as claim 1 was amended, the assertion that claim 1 is no longer generic to originally filed or amended claims 14-21 is not understood. Applicants respectfully submit that amended claim 1 remains generic to amended claims 14-21. For the reasons set forth in the following, Applicants respectfully submit that all of the claims are allowable, and thus there is no issue with respect to generic or species claims.

### **Rejections Under 35 U.S.C. §103(a)**

Claims 1, 5-9, 12, 13 and 17 stand rejected under 103(a) as obvious over US 4,918,503, Okuyama, in view of Van Zant, Microchip Fabrication. The Examiner asserted that Okuyama discloses a process such as that claimed, but admitted that Okuyama fails to indicate the method

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by which the steam oxidation is performed. The Examiner cited van Zant for the substitution of ISSG oxidation for the steam oxidation of Okuyama. Applicants respectfully traverse the rejection over these references on the following grounds.

In summary, Applicants respectfully submit the Examiner failed to state a correct *prima facie* case of obviousness. The cited references fail to disclose all the limitations of Applicants' claims, and fail to provide a suggestion or motivation for making the modifications which would be necessary to reach Applicants' claimed invention.

Applicants' claims specify that the first oxide layer is formed on the silicon surface of a semiconductor substrate; i.e., the first oxide is formed directly on the substrate. Okuyama does not disclose formation of an oxide layer on the substrate. Instead, Okuyama discloses formation of two intermediate layers on the substrate, and thereafter forming an oxide layer over the second intermediate layer. To wit, at col. 4, lines 28-41, Okuyama discloses that a P+-type region 46 and an N+-type region 45 are formed on the substrate 11, and that the first oxide layer 14 is formed not by steam oxidation of the substrate, but "through a heat treatment of 900°C under dry oxygen atmosphere, the first silicon oxide film 14 is formed." Thus, the first oxide layer 14 is not formed on the substrate 11 as claimed in Applicants' claims, but rather it is formed on an N+-type layer 45 which is on a P+-type layer 46, which is on the substrate 11. This is shown in Figs. 2A-2C, which in each case include the layers 45 and 46 separating the oxide layer 14 from the substrate 11.

While the Examiner might argue that the P+-type layer constitutes "a silicon surface", such a silicon surface is not a surface of the substrate 11, it is a surface of a layer which has been formed on the surface of an N+-type layer, which in turn has been formed on the surface of the substrate 11. Thus, even a broad reading of Applicants' claims does not reach the structure disclosed by Okuyama. Okuyama simply does not disclose an oxide layer formed as claimed.

Furthermore, in the disclosure at col. 4, the first oxide layer 14 is not formed by steam oxidation, but is formed by thermal oxidation at 900°C under dry oxygen atmosphere. While Okuyama does disclose oxidation in an oxygen or steam atmosphere at col. 2, lines 35-39, this is a very general discussion. Rather, a person of skill in the art would refer to and be taught by the much more specific and clear disclosure at column 4, not by the general introductory remarks at

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column 2. Thus, the disclosure at col. 2 of Okuyama would not lead a person to use steam oxidation to form the first oxide layer 14, even if the layer 14 was formed on the substrate 11, which it clearly is not. Since the layer 14 is not formed by steam oxidation, the teaching of van Zant to replace steam oxidation with ISSG oxidation is not applicable.

Van Zant fails to disclose anything different with respect to formation of the first oxide layer, and does not teach replacing the thermal oxidation at 900°C under dry oxygen atmosphere with the claimed ISSG oxidation. Furthermore, van Zant contains no explicit teaching that ISSG oxidation should be used to oxidize a nitride layer.

Thus, the cited references fail to disclose these features of the claimed invention. On this basis, the assertion of obviousness is shown to be in error and without proper basis.

In order to state a prima facie case of obviousness, the Examiner must show that the cited references disclose all of the limitations of the claims, and must show a motivation or suggestion to make the asserted combination and/or modifications necessary to reach the claimed invention. The Examiner failed to meet either of these requirements with respect to the presently claimed invention. As noted above, even if the references are taken as asserted by the Examiner, the references fail to teach forming the first oxide layer on the substrate. Instead, Okuyama teaches formation of two intermediate layers, one of N<sup>+</sup>-type and one of P<sup>+</sup>-type, on the substrate, and only thereafter forming an oxide layer on the two intermediate layers. This is not what is claimed and the claims do not read on such a structure. Thus, the Examiner failed to show all the claim limitations of Applicants' claimed invention.

As noted above, there is no motivation or suggestion, and the Examiner failed to identify a motivation or suggestion to modify the teachings of Okuyama by omitting the two intermediate layers.

#### **Election/Restriction**

As noted above, generic claim 1 is considered allowable. Accordingly, Applicants request the Examiner to put the claims 2-4 and 14-21 back into the case.

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For all the foregoing reasons, Applicants respectfully submit that the present application is in condition for allowance, and respectfully request notice to such effect.

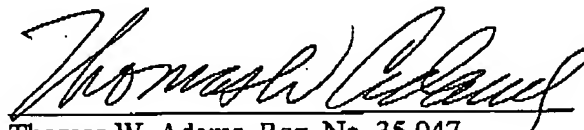
If the Examiner considers that a telephone interview would be helpful to facilitate favorable prosecution of this application, the Examiner is invited to telephone the undersigned.

It is believed no fee is required for this filing. However, if a fee is required, please charge the fee to Deposit Account No. 18-0988, Order No. AF01120.

Respectfully submitted,

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